

**Amendments to the Claims:**

This listing of the claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-12 (Cancelled)

13 (Previously Presented). A vector comprising a DNA sequence according to claim 55.

14 (Original). A vector according to claim 13 capable of being expressed in a eukaryotic host cell.

15 (Original). A vector according to claim 13 capable of being expressed in a prokaryotic host cell.

16 (Previously Presented). Transformed eukaryotic or prokaryotic host cells containing a vector according to claim 13.

17-19 (Cancelled)

20 (Currently Amended). A NIK polypeptide according to claim 53, wherein said polypeptide ~~has at least part of the amino acid sequence of SEQ ID NO:7~~ is the polypeptide encoded by the nucleotide sequence of SEQ ID NO:6, or a fragment thereof that binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B.

21 (Previously Presented). A method for producing a polypeptide that binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B, comprising:

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growing transformed host cells in accordance with  
claim 16 under conditions for the expression of an  
expression product from said cells;

effecting post-translational modification of said  
expression product as necessary for obtaining said  
polypeptide; and

isolating said polypeptide.

22 (Previously Presented). An antibody, active  
fragment of the antibody, or derivative thereof, specific for a  
polypeptide according to claim 69.

23-29 (Cancelled)

30 (Currently Amended). A method for isolating  
and identifying a polypeptide, ~~according to claim 20,~~  
capable of binding directly to human TRAF2, comprising  
applying the yeast two-hybrid procedure in which a sequence  
encoding said TRAF2 is carried by one hybrid vector and a  
sequence from a cDNA or genomic DNA library is carried by  
the second hybrid vector, the vectors then being used to  
transform yeast host cells and the positive transformed  
cells being isolated, followed by extraction of the said  
second hybrid vector to obtain a sequence encoding a protein  
which binds to said TRAF2.

31-42 (Cancelled)

43 (Previously Presented). A method for screening of a ligand capable of binding a polypeptide according to claim 69 comprising contacting an affinity chromatography matrix to which said polypeptide is attached with a cell extract whereby the ligand is bound to said matrix, and eluting, isolating and analyzing said ligand.

44 (Previously Presented). A method for screening of a DNA sequence coding for a ligand capable of binding to a polypeptide according to claim 69 comprising applying the yeast two-hybrid procedure in which a sequence encoding said polypeptide is carried by one hybrid vector and sequences from a cDNA or genomic DNA library are carried by the second hybrid vector, transforming yeast host cells with said vectors, isolating the positively transformed cells, and extracting said second hybrid vector to obtain a sequence encoding said ligand.

45 (Currently Amended). A method for identifying and producing a ligand capable of either inhibiting or increasing the cellular activity which is changed or mediated by TRAF2 comprising:

a) screening for a ligand capable of binding to a polypeptide comprising at least ~~a~~the portion of human TRAF2 having the amino acid residues 222-501 of TRAF2;

b) identifying and characterizing a ligand, other than TRAF2 or portions of a receptor of the TNF/NGF receptor family, found by the screening of (a) to be capable of said binding; and

c) producing said ligand in substantially isolated and purified form.

46 (Previously Presented). A method for identifying and producing a ligand capable of either inhibiting or increasing the cellular activity which is changed or mediated by a polypeptide according to claim 53, comprising:

a) screening for a ligand capable of binding to said polypeptide;

b) identifying and characterizing a ligand, other than TRAF2 or portions of a receptor of the TNF/NGF receptor family, found by said screening to be capable of said binding; and

c) producing said ligand in substantially isolated and purified form.

47 (Currently Amended). A method for identifying and producing a ligand capable of either inhibiting or increasing the cellular activity which is changed or mediated by NIK comprising:

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a) screening for a ligand capable of binding to  
~~at least a portion of the~~ NIK sequence of SEQ ID NO:7;

b) identifying and characterizing a ligand,  
other than TRAF2 or portions of a receptor of the TNF/NGF  
receptor family, found by said screening step to be capable  
of said binding; and

c) producing said ligand in substantially  
isolated and purified form.

48 (Currently Amended). A method for identifying  
and producing a molecule capable of directly or indirectly  
either inhibiting or increasing the cellular activity which  
is changed or mediated by NIK (SEQ ID NO:7), comprising:

a) screening for a molecule capable of either  
inhibiting or increasing the cellular activity which is  
changed or mediated by NIK;

b) identifying and characterizing said molecule;  
and

c) producing said molecule in substantially  
isolated and purified form.

49 (Previously Presented). A method for  
identifying and producing a molecule capable of directly or  
indirectly either inhibiting or increasing the cellular  
activity which is changed or mediated by a polypeptide  
according to claim 69 comprising:

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a) screening for a molecule capable of directly or indirectly either inhibiting or increasing the cellular activity which is changed or mediated by a polypeptide according to claim 69;

b) identifying and characterizing said molecule;  
and

c) producing said molecule in substantially isolated and purified form.

50 (Previously Presented). An antibody, active fragment of the antibody, or derivative thereof, specific for a polypeptide according to claim 53.

51-52 (Cancelled)

53 (Previously Presented). A polypeptide in accordance with claim 69, wherein said polypeptide of (a) is the polypeptide encoded by the nucleotide sequence of SEQ ID NO:6.

54 (Previously Presented). A DNA sequence encoding a polypeptide in accordance with claim 69.

55 (Previously Presented). A DNA sequence encoding a polypeptide in accordance with claim 69, selected from the group consisting of:

(i) a cDNA sequence comprising the nucleotide sequence of SEQ ID NO:1;

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(ii) a cDNA sequence comprising the nucleotide sequence of SEQ ID NO:6;

(iii) a cDNA sequence comprising the nucleotide sequence of SEQ ID NO:4;

(iv) a fragment of a sequence of (i)-(iii) which encodes a polypeptide that binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B;

(v) a DNA sequence capable of hybridization to a sequence of (i)-(iv) under moderately stringent conditions and which encodes a polypeptide that binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B; and

(vi) any DNA sequence other than those defined in (i)-(v) which encodes a polypeptide in accordance with claim 69.

56 (Previously Presented). A DNA sequence in accordance with claim 55, comprising the nucleotide sequence of SEQ ID NO:1 or SEQ ID NO:4.

57 (Previously Presented). A DNA sequence in accordance with claim 55, comprising the nucleotide sequence of SEQ ID NO:3.

58 (Previously Presented). A DNA sequence in accordance with claim 55, comprising a DNA sequence encoding the polypeptide encoded by the DNA sequence of SEQ ID NO:6 (protein NIK of SEQ ID NO:7)).

59 (Currently Amended). A DNA sequence encoding

(1) a polypeptide in accordance with claim 53, or

(2) a polypeptide that is encoded by a DNA sequence  
capable of binding to a DNA sequence encoding the sequence of  
(1) under moderately stringent conditions, which polypeptide  
binds to TRAF2 and either inhibits or increases the activity of  
~~NF- $\kappa$ B and is encoded by a DNA sequence capable of binding to a~~  
~~DNA sequence encoding the sequence of (1) under moderately~~  
~~stringent conditions.~~

60 (Previously Presented). An anti-sense  
oligonucleotide consisting of a sequence complementary to at  
least a portion of the mRNA encoding a TRAF2-binding  
polypeptide comprising the amino acid sequence of SEQ ID  
NO:2, an amino acid sequence encoded by the nucleotide  
sequence of SEQ ID NO:3, or the amino acid sequence of SEQ  
ID NO:5, said anti-sense oligonucleotide being capable of  
effectively blocking the translation of said mRNA.

61 (Cancelled)

62 (Previously Presented). An isolated polypeptide  
comprising the amino acid sequence set forth as SEQ ID NO:7 or  
an analog thereof which differs from the sequence of SEQ ID  
NO:7 by a substitution, deletion or insertion of a single amino  
acid, which analog binds to TRAF2 and either inhibits or  
increases the activity of NF- $\kappa$ B.



63 (Previously Presented). A DNA sequence encoding a polypeptide in accordance with claim 62.

64 (Previously Presented). A method for identifying and producing a ligand capable of either inhibiting or increasing the cellular activity which is changed or mediated by a polypeptide according to claim 62, comprising:

a) screening for a ligand capable of binding to said polypeptide;

b) identifying and characterizing a ligand, other than TRAF2 or portions of a receptor of the TNF/NGF receptor family, found by said screening to be capable of said binding; and

c) producing said ligand in substantially isolated and purified form.

65 (Previously Presented). A DNA sequence encoding a polypeptide in accordance with claim 53.

66 (Previously Presented). A vector comprising a DNA sequence according to claim 65.

67 (Previously Presented). Transformed eukaryotic or prokaryotic host cells containing a vector according to claim 65.

68 (Previously Presented). A method for producing a polypeptide that binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B, comprising:

growing transformed host cells in accordance with claim 67 under conditions for the expression of an expression product from said cells;

effecting post-translational modification of said expression product as necessary for obtaining said polypeptide; and

isolating said polypeptide.

69 (Previously Presented). A polypeptide that binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B, said polypeptide comprising:

a) the amino acid sequence of SEQ ID NO:2, an amino acid sequence encoded by the nucleotide sequence of SEQ ID NO:6, or the amino acid sequence of SEQ ID NO:5;

b) an amino acid sequence of an analog of a), having no more than ten changes in the amino acid sequence of a), each said change being a substitution, deletion or insertion of an amino acid, which analog binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B;

c) an amino acid sequence of a fragment of a), which fragment binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B; or

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d) a derivative of a), b) or c) by modification of a functional group which occurs as a side chain or an N- or C-terminal group of one or more amino acid residues thereof without changing one amino acid to another of the twenty commonly occurring natural amino acids, which derivative binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B.

70 (Currently Amended). A polypeptide in accordance with claim 62, wherein said analog is one which differs from the sequence of SEQ ID NO:7 by a single conservative substitution, said conservative substitution being one of the following:

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<u>Original</u> <u>Residue</u>	<u>Conservative</u> <u>Substitution</u>
<u>Ala</u>	<u>Gly; Ser</u>
<u>Arg</u>	<u>Lys</u>
<u>Asn</u>	<u>Gln; His</u>
<u>Asp</u>	<u>Glu</u>
<u>Cys</u>	<u>Ser</u>
<u>Gln</u>	<u>Asn</u>
<u>Glu</u>	<u>Asp</u>
<u>Gly</u>	<u>Ala; Pro</u>
<u>His</u>	<u>Asn; Gln</u>
<u>Ile</u>	<u>Leu; Val</u>
<u>Leu</u>	<u>Ile; Val</u>
<u>Lys</u>	<u>Arg; Gln; Glu</u>
<u>Met</u>	<u>Leu; Tyr; Ile</u>
<u>Phe</u>	<u>Met; Leu; Tyr</u>
<u>Ser</u>	<u>Thr</u>
<u>Thr</u>	<u>Ser</u>
<u>Trp</u>	<u>Tyr</u>
<u>Tyr</u>	<u>Trp; Phe</u>
<u>Val</u>	<u>Ile; Leu;</u>

or said conservative substitution being an exchange within  
one of the following five groups:

1. Small aliphatic, nonpolar or slightly polar residues: Ala, Ser, Thr, Pro, Gly;
2. Polar negatively charged residues and their amides: Asp, Asn, Glu, Gln;
3. Polar, positively charged residues: His, Arg, Lys;
4. Large aliphatic nonpolar residues: Met, Leu, Ile, Val, Cys; and
5. Large aromatic residues: Phe, Tyr, Trp.

~~selected from the group of conservative substitutions set forth in Tables 1A and 1B.~~

71 (Previously Presented). A polypeptide in accordance with claim 70, wherein said single conservative substitution is between an alanine and a proline residue.

72 (Cancelled)

73 (Previously Presented). A polypeptide in accordance with claim 69, wherein said analog of b) is one having no more than five of said changes in the amino acid sequence of a).

74 (Previously Presented). A polypeptide in accordance with claim 69, wherein said analog of b) is one having no more than three of said changes in the amino acid sequence of a).

75 (Previously Presented). A polypeptide in accordance with claim 69, wherein said analog of b) is one

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having no more than one of said changes in the amino acid  
sequence of a).

76 (Cancelled)

77 (Previously Presented). A DNA sequence  
encoding a polypeptide in accordance with clam 73.

78 (Previously Presented). A DNA sequence  
encoding a polypeptide in accordance with clam 74.

79 (Previously Presented). A DNA sequence  
encoding a polypeptide in accordance with clam 75.